WHAT IS CLAIMED IS:

1. A manufacturing method of a gallium nitride(GaN)-based blue light emitting diode (LED) ohmic electrodes, comprising the steps of :

a. growing an alloy thin film upon a P type gallium nitride epitaxial layer ;

b. using lift-off techniques to obtain a circular transmission line model pattern made from the alloy thin film ;

c. heat treating the alloy thin film of the circular transmission line model pattern to obtain a better ohmic property ;

wherein the lower contacting electrical resistance between the ~~NiCr~~ alloy and the P type gallium nitride epitaxial layers decreases the serial electrical resistance between the P-GaN gallium nitride epitaxial layer and N-GaN gallium nitride epitaxial layer and lowers forward breakover voltage of the light emitting diode.

2. A manufacturing method of a gallium nitride(GaN)-based blue light emitting diode (LED) ohmic electrodes according to claim 1, wherein the vacuum pressure in growing said circular transmission line model alloy thin film is 1.2×10^{-5} torr.

3. A manufacturing method of a gallium nitride(GaN)-based blue light emitting diode (LED) ohmic electrodes according to claim 1, wherein the better temperature in heat treating said circular transmission line model alloy thin film is 400–700 ℃.

4. A manufacturing method of a gallium nitride(GaN)-based blue light emitting diode (LED) ohmic electrodes according to claim 1, wherein the material of the said circular transmission line model alloy thin film is NiCr

alloy.

5. A manufacturing method of a gallium nitride(GaN)-based blue light emitting diode (LED) ohmic electrodes according to claim 1, wherein the composition of the nickel in the said NiCr alloy is 1% to 99%.

6. A manufacturing method of a gallium nitride(GaN)-based blue light emitting diode (LED) transparent conductive layer, comprising the steps of:

a. growing an alloy thin film upon the P type gallium nitride epitaxial layer ;

b. heat treating the thin film alloy, which makes the said alloy thin film be a transparent contacting electrical conducting layer and have a better ohmic property and transparency ;

wherein the better transparency and ohmic property of the said transparent conductive layer increases the area of the injected current, which makes the injected current effectively and uniformly disperses through the N-electrode.

7. A manufacturing method of a gallium nitride(GaN)-based blue light emitting diode (LED) transparent conductive layer according to claim 6, wherein the said alloy thin film is grown by way of evaporation.

8. A manufacturing method of a gallium nitride(GaN)-based blue light emitting diode (LED) transparent conductive layer according to claim 6, wherein the said alloy thin film is grown by way of sputtering.

9. A manufacturing method of a gallium nitride(GaN)-based blue light emitting diode (LED) transparent conductive layer according to claim 6, wherein the said alloy thin film is grown by way of electron beam

evaporation.

10. A manufacturing method of a gallium nitride(GaN)-based blue light emitting diode (LED) transparent conductive layer according to claim 6, wherein the material of the said contacting thin film is NiCr alloy.

11. A manufacturing method of a gallium nitride(GaN)-based blue light emitting diode (LED) transparent conductive layer according to claim 6, wherein the better heat treatment temperature of the said alloy thin film is 400-700℃.

12. A manufacturing method of a gallium nitride(GaN)-based blue light emitting diode (LED) transparent conductive layer according to claim 7, wherein the better heat treatment temperature of the said alloy thin film is 400-700℃.

13. A manufacturing method of a gallium nitride(GaN)-based blue light emitting diode (LED) transparent conductive layer according to claim 8, wherein the better heat treatment temperature of the said alloy thin film is 400-700℃.

14. A manufacturing method of a gallium nitride(GaN)-based blue light emitting diode (LED) transparent conductive layer according to claim 9, wherein the better heat treatment temperature of the said alloy thin film is 500-700℃.

15. A manufacturing method of a gallium nitride(GaN)-based blue light emitting diode (LED) transparent conductive layer according to claim 10, wherein the composition of the nickel in the said NiCr alloy is 1% to 99%.